Salbutamol or Steroids for Intubation-Related Bronchospasm?

Patients with reactive airway disease have a small but greater-than-normal risk for severe bronchospasm after intubation. Pretreatment with intravenous lidocaine or inhaled salbutamol has been shown to mitigate this problem in some studies but not others. Investigators in Germany evaluated the effect of salbutamol alone or with prednisone in 31 patients with reversible airway obstruction (FEV₁<70% of predicted, with >10% increase after 2 puffs of salbutamol) who were scheduled for elective surgery and were not receiving steroids or β-agonists. Patients were randomized to receive 5 days of treatment either with salbutamol (2 puffs 3 times daily) plus oral placebo or with the same salbutamol regimen plus oral prednisone (40 mg daily). Another 10 patients with similar characteristics served as a control group and received 2 puffs of salbutamol 10 minutes before anesthesia with thiopental and vecuronium.

After 1 day of treatment, pulmonary function improved significantly in all patients in the two 5-day treatment groups, and no differences were noted between these groups. Seven patients in each of the 5-day treatment groups did not complete the study because they required surgery sooner than planned or were discharged from the hospital. The incidence of auscultatory wheezing after intubation was significantly reduced in the 5-day salbutamol-plus-prednisone group (1 of 8 patients; 12.5%) compared with the 5-day salbutamol-plus-placebo group (7 of 9; 77.8%) and the 2-puff salbutamol group (8 of 10; 80.0%).

Comment: This study sheds little light on a serious problem. Most patients with this severity of disease would already be receiving treatment with steroids or β-agonists, and probably very few, if any, would be induced with thiopental, which causes histamine release. For now, the best approach to patients with reactive airway disease appears to be pretreatment with lidocaine, followed by induction with IV ketamine, and then, in-line nebulized salbutamol if bronchospasm ensues.

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